THAT WHICH IS CLAIMED IS:

1. A phased array antenna comprising:

a substrate; and

a plurality of spaced apart phased array antenna elements carried by said substrate and arranged along an imaginary Archimedean spiral.

2. The phased array antenna of Claim 1 wherein the imaginary Archimedean spiral comprises a plurality of levels.

3. The phased array antenna of Claim 2 wherein a spacing between adjacent pairs of phased array antenna elements along the imaginary Archimedean spiral is substantially equal to a radial spacing between adjacent levels.

4. The phased array antenna of Claim 1 wherein the imaginary Archimedean spiral is defined by the polar coordinate equation $r = a\theta^N$, where r is a radius, θ is an angle, a is a real number, and N=1.

5. The phased array antenna of Claim 1 wherein said plurality of phased array antenna elements have a substantially equal spacing along the imaginary Archimedean spiral.

6. The phased array antenna of Claim 5 wherein the phased array antenna has an operating

wavelength λ, and wherein the substantially equal spacing is less than about 10λ.

7. The phased array antenna of Claim 1 wherein the phased array antenna has an operating wavelength λ, and wherein a spacing between adjacent pairs of phased array antenna elements is less than about 10λ.

8. The phased array antenna of Claim 1 wherein said plurality of phased array antenna elements comprises greater than about 20 phased array antenna elements.

9. The phased array antenna of Claim 1 further comprising at least one controller cooperating with said plurality of phased array antenna elements to provide beam steering.

10. The phased array antenna of Claim 9 wherein said at least one controller comprises:

a plurality of element controllers each connected to at least one of said phased array antenna elements; and

a central controller connected to said plurality of element controllers.

11. The phased array antenna of Claim 1 wherein substantially all of the plurality of phased array antenna elements of the phased array antenna are along the imaginary Archimedean spiral.

12. A phased array antenna comprising:

a substrate; and

a plurality of spaced apart phased array antenna elements on said substrate, substantially all of said phased array antenna elements being arranged along an imaginary Archimedean spiral comprising a plurality of levels, a spacing between adjacent pairs of phased array antenna elements along the imaginary Archimedean spiral being substantially equal to a radial spacing between adjacent levels.

13. The phased array antenna of Claim 12 wherein the imaginary Archimedean spiral is defined by the polar coordinate equation $r = a\theta^N$, where r is a radius, θ is an angle, a is a real number, and N=1.

14. The phased array antenna of Claim 12 wherein the phased array antenna has an operating wavelength λ, and wherein the spacing between adjacent pairs of phased array antenna elements is less than about 10λ.

15. The phased array antenna of Claim 12 wherein said plurality of phased array antenna elements comprises greater than about 20 phased array antenna elements.

16. The phased array antenna of Claim 12 further comprising at least one controller cooperating

with said plurality of phased array antenna elements to provide beam steering.

17. The phased array antenna of Claim 16 wherein said at least one controller comprises:

a plurality of element controllers each connected to at least one of said phased array antenna elements; and

a central controller connected to said plurality of element controllers.

18. A method for making a phased array antenna comprising:

providing a substrate; and

arranging a plurality of phased array antenna elements on the substrate along an imaginary Archimedean spiral.

19. The method of Claim 18 wherein the Archimedean spiral comprises a plurality of levels.

20. The method of Claim 19 wherein arranging comprises setting a spacing between adjacent pairs of phased array antenna elements along the imaginary Archimedean spiral to be substantially equal to a radial spacing between adjacent levels.

21. The method of Claim 18 wherein the imaginary Archimedean spiral is defined by the polar coordinate equation $r = a\theta^N$, where r is a radius, θ is an angle, a is a real number, and N=1.

22. The method of Claim 18 wherein arranging comprises arranging substantially all of the plurality of phased array antenna elements of the phased array antenna to have a substantially equal spacing along the imaginary Archimedean spiral.

23. The method of Claim 22 wherein the phased array antenna has an operating wavelength λ, and wherein the substantially equal spacing is less than about 10λ.

24. The method of Claim 18 wherein the phased array antenna has an operating wavelength λ, and wherein arranging comprises setting a spacing between adjacent pairs of phased array antenna elements to be less than about 10λ.

25. The method of Claim 18 wherein the plurality of phased array antenna elements comprises greater than about 20 phased array antenna elements.